1. An apparatus for delivering a carbonated beverage at or near the freezing point of water, blending fresh water, carbon dioxide gas and beverage syrup together for dispensing a cold soft drink at a faucet bank, comprises essentially:

a double tank carbonator having an inner tank contained within an outer tank, with an insulated void between said inner tank and said outer tank, said inner tank surrounded by and attached to a set of refrigerated cooling coils attached to a refrigerant circulating system;

a compressed gas line connected to a carbon dioxide cylinder, directing carbon dioxide gas to the inner tank and to a plurality of syrup pumps;

a plurality of diet syrup lines and a plurality of sugared syrup lines, each of said plurality of diet syrup lines connected to a diet syrup tank, and each of said plurality of sugared syrup lines connected to a sugared syrup tank, each of said plurality of diet syrup lines and each of said plurality of sugared syrup lines passing through one of said plurality of syrup pumps, said plurality of diet syrup lines further directed through a heat exchange unit to said faucet bank, each of said plurality of sugared syrup lines passing through one of said plurality of syrup pumps to a syrup coil, said syrup coil passing within said inner tank, said syrup coil further attached to said faucet bank;

a water circulating system comprising a first fresh water line to said heat exchange unit, a second fresh water line from said heat exchange unit to a water circulating loop delivering fresh water to said faucet bank and to said inner tank, with a soda water outlet line connecting said inner tank to said faucet bank, a first return soda line connecting said faucet bank to a central soda water tube within said heat exchange unit, and a second return soda line connecting said central soda water tube to said water circulating loop;

a fluid level probe within said inner tank integrated with and controlling said water circulating loop;

a temperature sensing means within said inner tank integrated with and controlling said refrigerant circulating system.

2. The apparatus as disclosed in Claim 1, said water circulating system further comprising:

said first fresh water line is connected to the heat exchange unit

said second fresh water line is connected to said water circulating loop having a third fresh water line including a check valve, a solenoid and a water circulating pump;

said fourth fresh water line delivering fresh water to said faucet bank;

a soda water inlet line connected to a water inlet tube within said inner tank of said double tank carbonator, wherein said fresh water a return soda water is further mixed with said carbon dioxide gas in said inner tank forming soda water chilled to a temperature at or below the freezing temperature of water;

a soda water outlet line connecting said inner tank with said faucet bank delivering soda water to said faucet bank;

a first return soda line connecting said faucet bank to said central soda water tube within said heat exchange unit; and

a second return soda line connecting said central soda water tube to said water circulating loop.

3. The apparatus as disclosed in Claim 1, said refrigerant circulating system is further comprising:

said set of refrigerated cooling coils attached to said inner tank within said void between said inner tank and said outer tank, said void occupied by a vacuum;

further said set of refrigerated cooling coils connected to an first refrigerant line passing over an accumulator, through a dryer to a compressor;

a second refrigerant line from said compressor directed to a condenser unit; and

a third refrigerant line from said condenser unit passing back over said accumulator to said refrigerated cooling coils, said refrigerant circulating system filled with a compressed refrigerated gas delivered to said set of refrigerated cooling coils at a temperature below the freezing point of water, said refrigerant circulating regulated by said temperature sensing means; and

said temperature sensing means housed within a sealed channel penetrating through said outer tank and said inner tank, said temperature sensing means integrated with said refrigerant circulating system, operating said refrigerant circulating system to regulate the temperature of the carbonated water within the inner tank.

4. The apparatus as disclosed in Claim 1, said refrigerant circulating system is further comprising:

said set of refrigerated cooling coils attached to said inner tank within said void between said inner tank and said outer tank, said void occupied by a highly insulating expansion foam;

further said set of refrigerated cooling coils connected to an first refrigerant line passing over an accumulator, through a dryer to a compressor;

a second refrigerant line from said compressor directed to a condenser unit; and

a third refrigerant line from said condenser unit passing back over said accumulator to said refrigerated cooling coils, said refrigerant circulating system filled with a compressed refrigerated gas delivered to said set of refrigerated cooling coils at a temperature below the freezing point of water, said refrigerant circulating regulated by said temperature sensing means; and

said temperature sensing means housed within a sealed channel penetrating through said outer tank and said inner tank, said temperature sensing means integrated with said refrigerant circulating system, operating said refrigerant circulating system to regulate the temperature of the carbonated water within the inner tank.

5. The apparatus as disclosed in Claim 1, said double tank carbonator, said inner tank and said outer tank further comprising:

a lower end of said inner tank suspended within a lower end of said outer tank by a support peg;

a seal cap allowing access to said void through an upper end of said outer tank; and

a hub attached to said upper end of said outer tank, said hub further penetrating into an upper end of said inner tank, said hub having a central opening attaching to a perforated inner cylinder within which is inserted said fluid level probe, said fluid level probe attached within said central opening of said hub by an attaching means, said fluid level probe regulating the flow of fresh water into said inner tank through said solenoid.

6. The apparatus as disclosed in Claim 1, said double tank carbonator, said inner tank and said outer tank further comprising:

a lower end of said inner tank suspended within a lower end of said outer tank by a support peg;

a seal cap allowing access to said void through an upper end of said outer tank; and

a hub attached to said upper end of said outer tank, said hub further penetrating into an upper end of said inner tank, said hub having a central opening attaching to a perforated inner cylinder within which is inserted said fluid level probe, said fluid level probe attached within said central opening of said hub by an attaching means, said fluid level probe regulating the flow of fresh water into said inner tank through said solenoid; and

said hub having a plurality of holes, a first hole accepting said compressed gas line from said carbon dioxide cylinder, a second hole accepting said soda water inlet line connected to a J-tube positioned within said inner tank, a third hole accepting said soda water outlet line, and a fourth hole providing for pressure relief to said inner tank, said J-tube, said compressed gas line and said soda water outlet line directed to said lower end of said inner tank.

7. The apparatus as disclosed in Claim 1, said heat exchange unit further comprising:

a sealed cylindrical frame member having an inner cavity with a water inlet and a water outlet, said water inlet connected to said first fresh water line and said water outlet connected to said water circulating system through said second fresh water line;

said central soda water tube within said inner cavity connected between said first return soda line and said second return soda line; and

a plurality of diet syrup tubes connecting to said diet syrup lines prior to connection of said diet syrup lines to said faucet bank.

8. The apparatus as disclosed in Claim 1, each of said syrup coils forming a closed tube, further comprising:

a syrup inlet connected to said sugared syrup line;

an outer syrup tube having an interior surface aligned with a multiplicity of inwardly protruding dimples; and

a syrup outlet, connected to an internal outlet tube located within said outer syrup tube, said internal outlet tube extracting sugared syrup from said outer syrup tube, said syrup outlet connected to said faucet bank, each said syrup coil secured within the double tank carbonator.

9. The apparatus as disclosed in Claim 1, wherein:

said double tank carbonator, said inner tank and said outer tank further comprises

a lower end of said inner tank suspended within a lower end of said outer tank by a support peg,

a seal cap allowing access to said void through an upper end of said outer tank, and

a hub attached to said upper end of said outer tank, said hub further penetrating into an upper end of said inner tank, said hub having a central opening attaching to a perforated inner cylinder within which is inserted said fluid level probe, said fluid level probe attached within said central opening of said hub by an attaching means,

said fluid level probe regulating the flow of fresh water into said inner tank, and

said hub having a plurality of holes, a first hole accepting said compressed gas line from said carbon dioxide cylinder, a second hole accepting said soda water outlet line attaching to said water inlet tube connected to a J-tube positioned within said inner tank, a third hole accepting said soda water outlet line, and a fourth hole providing for pressure relief to said inner tank, said J-tube, said compressed gas line and said carbonated water outlet line directed to said lower end of said inner tank;

said refrigerant circulating system is further comprises said set of refrigerated cooling coils attached to said inner tank within an insulating void between said inner tank and said outer tank, further said set of refrigerated cooling coils connected to an first refrigerant line passing over an accumulator, through a dryer to a compressor,

a second refrigerant line from said compressor directed to a condenser unit; and

a third refrigerant line from said condenser unit passing back over said accumulator

to said refrigerated cooling coils, said refrigerant circulating system filled with a compressed refrigerated gas delivered to said set of refrigerated cooling coils at a temperature below the freezing point of water, said refrigerant circulating regulated by said temperature sensing means; and

said temperature sensing means housed within a sealed channel penetrating through said outer tank and said inner tank, said temperature sensing means integrated with said refrigerant circulating system, operating said refrigerant circulating system to regulate the temperature of the carbonated water within the inner tank;

said water circulating system further comprises, said first fresh water line is connected to the heat exchange unit;

said second fresh water line is connected to said water circulating loop having a third fresh water line including a check valve, a solenoid connected to said fluid level probe to regulate the flow of fresh water into the water circulating loop, and a water circulating pump,

said fourth fresh water line delivering fresh water to said faucet bank,

a soda water inlet line connected to a water inlet tube within said inner tank of said double tank carbonator, wherein said fresh water a return soda water is further mixed with said carbon dioxide gas in said inner tank forming soda water chilled to a temperature at or below the freezing temperature of water,

a soda water outlet line connecting said inner tank with said faucet bank delivering soda water to said faucet bank,

a first return soda line connecting said faucet bank to said central soda water tube

within said heat exchange unit, and

a second return soda line connecting said central soda water tube to said water circulating loop;

said heat exchange unit further comprises a sealed cylindrical frame member having an inner cavity with a water inlet and a water outlet, said water inlet connected to said first fresh water line and said water outlet connected to said water circulating system by said second fresh water line,

a central soda water tube within said inner cavity, said central water tube connected between said first soda return line and said second soda return line, and

a plurality of diet syrup tubes connecting to said diet syrup lines prior to connection of said diet syrup lines to said faucet bank; and

each of said syrup coils forming a closed tube, further comprises a syrup inlet connected to said sugared syrup line,

an outer syrup tube having an interior surface aligned with a multiplicity of inwardly protruding dimples, and

a syrup outlet, connected to an internal outlet tube located within said outer syrup tube, said internal outlet tube extracting sugared syrup from said outer syrup tube, said syrup outlet connected to said faucet bank, each said syrup coil secured within the double tank carbonator.

10. A double tank carbonator adapted for use within a soft drink beverage dispenser for mixing fresh water and carbon dioxide forming carbonated water, lowering the temperature of said carbonated water to a temperature at or below the freeing temperature of water, comprising:

an inner tank contained within an outer tank, said inner tank surrounded by and attached to a set of refrigerated cooling coils connected to a refrigerant circulating system;

an insulated void between said inner tank and said outer tank;

a hub attached to an upper end of said outer tank, said hub further penetrating into an upper end of said inner tank having a central opening attaching to a perforated inner cylinder within which is inserted said fluid level probe, said fluid level probe attached within said central opening of said hub by an attaching means, said fluid level probe connected to a solenoid providing fresh water to said inner tank, regulating said amount of fresh water into said inner tank, said hub further comprising a plurality of holes, a first hole accepting said compressed gas line from said carbon dioxide cylinder, a second hole accepting fresh water connected to a water inlet tube which terminates into a J-tube positioned within said inner tank, a third hole accepting said carbonated water outlet line, and a fourth hole providing for pressure relief to said inner tank, said J-tube, said compressed gas line and said carbonated water outlet line directed to a lower end of said inner tank; and

a temperature sensing means, housed within a sealed channel penetrating through said outer tank and said inner tank, regulating said refrigerant circulating system.

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11. The double tank carbonator, as disclosed in Claim 10, wherein said insulated void is occupied by a vacuum.

12. The double tank carbonator, as disclosed in Claim 10, further comprising:

said lower end of said inner tank suspended within said lower end of said outer tank by a support peg; and

a seal cap allowing access to said void through said upper end of said outer tank.